

**DEPARTMENT OF TRANSPORTATION  
TRANSPORTATION ENGINEER (ELECTRICAL)**

**OPEN - STATEWIDE - CONTINUOUS**

**3609 - HJ54 - 0TR42**



**CALIFORNIA  
STATE  
GOVERNMENT**

AN EQUAL OPPORTUNITY EMPLOYER TO ALL REGARDLESS OF RACE, COLOR, CREED, NATIONAL ORIGIN, ANCESTRY, SEX, MARITAL STATUS, DISABILITY, RELIGIOUS OR POLITICAL AFFILIATION, AGE, OR SEXUAL ORIENTATION

IT IS AN OBJECTIVE OF THE STATE OF CALIFORNIA TO ACHIEVE A DRUG-FREE STATE WORK PLACE. ANY APPLICANT FOR STATE EMPLOYMENT WILL BE EXPECTED TO BEHAVE IN ACCORDANCE WITH THIS OBJECTIVE BECAUSE THE USE OF ILLEGAL DRUGS IS INCONSISTENT WITH THE LAW OF THE STATE, THE RULES GOVERNING CIVIL SERVICE AND THE SPECIAL TRUST PLACED IN PUBLIC SERVANTS

<b>EXAMINATION TYPE</b>	This is an open examination. Applications will not be accepted on a promotional basis. Career credits will not be granted.								
<b>WHO SHOULD APPLY</b>	Applicants who meet the minimum qualifications as stated below may apply for and take this examination at any time. Once you have taken the examination, you may not reapply for six (6) months. All applicants must meet the education and/or experience requirements as stated on this examination announcement.								
<b>GENERAL INFORMATION</b>	Meeting the minimum qualifications to compete in the Transportation Engineer (Electrical) examination does not assure placement on the eligible list. Competitors must successfully pass the examination.								
<b>LOCATION</b>	This test is administered by the State Personnel Board, on behalf of the Department of Transportation, on an open, continuous, statewide basis, utilizing the Internet.								
<b>HOW TO APPLY</b>	<p>The application and examination for the Transportation Engineer (Electrical) classification are available on a continuous basis on the Internet. Applicants will respond to questions regarding their ability to meet minimum qualifications, provide their contact information, and take the examination on the Internet. Candidates may only take the examination once in a six (6) month period.</p> <p><b>PLEASE DO NOT SUBMIT A STATE APPLICATION FORM. THE APPLICATION FORM FOR THE TRANSPORTATION ENGINEER (ELECTRICAL) IS CONTAINED IN THE INTERNET PROCESS.</b></p> <p>If you do not have Internet access, there are public access Internet terminals in over 150 California public libraries. Contact your local library for information as to where the nearest Internet terminal is located, and the policies related to usage. DO NOT contact the State Personnel Board or the Department of Transportation for this information. The State Personnel Board and the Department of Transportation do not maintain an up-to-date list of library locations. The State Personnel Board Service Center, located at 801 Capitol Mall, Sacramento, also has Internet terminals that are available for public use at no cost. For more information, contact the Service Center at (916) 653-1705.</p> <p>If you are not familiar with the Internet, you may have a friend or family member assist you. You may apply for the examination on the Internet by connecting to: <a href="http://www.spb.ca.gov/employment/exam_start.htm">http://www.spb.ca.gov/employment/exam_start.htm</a> and following the on-line instructions.</p> <p>Please note that the Internet system will not be available on Tuesdays between 7:00 a.m. and 1:00 p.m., Pacific Standard Time, for processing and maintenance. DO NOT begin the application process on the Internet during this time as your record will not be processed. If you begin the application process before 7:00 a.m., be sure to allow sufficient time to complete the process. It takes approximately 1 to 1 1/2 hours to complete the application and examination on the Internet.</p>								
<b>SPECIAL TESTING ARRANGEMENTS</b>	If you are disabled and need special assistance or special testing arrangements, please contact the State Personnel Board at (916) 653-1502, TTY (916) 654-6336, or via California Relay (Telephone) Service for the Deaf or Hearing Impaired from TDD phones: 1-800-735-2929, or from voice phones: 1-800-735-2922.								
<b>SALARY RANGES</b>	<table><tr><td>Range A:</td><td>\$3,838 - \$4,442</td></tr><tr><td>Range B:</td><td>\$4,394 - \$5,337</td></tr><tr><td>Range C:</td><td>\$5,035 - \$6,116</td></tr><tr><td>Range D:</td><td>\$5,633 - \$6,844</td></tr></table>	Range A:	\$3,838 - \$4,442	Range B:	\$4,394 - \$5,337	Range C:	\$5,035 - \$6,116	Range D:	\$5,633 - \$6,844
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ELIGIBLE LIST

An open merged eligible list will be established for the California Department of Transportation. The names of successful competitors will be merged onto the eligible list in order of final score regardless of test date. Eligibility expires twelve (12) months after it is established. Competitors must then test again to reestablish eligibility. Competitors may also retest after six (6) months of the date that established their list eligibility.

MINIMUM QUALIFICATIONS

It is your responsibility to make sure you meet the education and/or experience requirements stated below.

EITHER I

Graduation from a four-year curriculum in electrical, electronic, or computer engineering accredited by the Accreditation Board for Engineering Technology (ABET). (Registration as a senior in such a curriculum will admit an application to the competition, but he/she must produce evidence of graduation before he/she will be considered eligible for appointment.)

(Possession of a valid certificate as an Engineer-in-Training issued by the California State Board of Registration for Professional Engineers and Land Surveyors, or issued by another jurisdiction and accepted by the California Board in lieu of the first division of the examination as an electrical engineer, may be substituted for the required education.)

OR II

Possession of equivalent qualifications may be demonstrated by graduation from an engineering curriculum which includes the basic electrical, electronic, and computer engineering courses normally covered in a standard four-year engineering curriculum, and by qualifying in a written examination covering basic electrical and electronic engineering. (Registration as a Senior in such a curriculum will admit an applicant to the qualifying examination, but he/she must produce evidence of graduation before he/she will be considered eligible for appointment.)

OR III

A Master's or Doctorate degree in an electrical, electronic, or computer engineering curriculum from a college or university that has a baccalaureate degree program in an electrical, electronic or computer engineering curriculum which is accredited by the Accreditation Board for Engineering Technology (ABET). (Registration as a candidate in such a curriculum will admit an application to the competition, but he/she must produce evidence of graduation before he/she will be considered eligible for appointment.)

IMPORTANT NOTE

Graduates in electrical, electronic, or computer engineering from a non-ABET accredited college or university will be required to pass a written test prior to taking the examination.

LOCATIONS

Positions may exist in the following locations:

Bishop	Marysville	San Diego
Eureka	Oakland	San Luis Obispo
Fresno	Redding	Stockton
Irvine	Sacramento	
Los Angeles	San Bernardino	

JOB DUTIES/TYPICAL TASKS

A Transportation Engineer (Electrical) performs, or assists in performing electrical or electronic design, and electrical and electronic construction and maintenance inspections, specification preparation and estimating for highway systems, such as traffic management, signal and lighting and transportation-related facilities (such as moveable bridges, drainage pumping plants, vehicular tunnels, safety roadside rest areas, maintenance stations, truck weigh and inspection stations, and toll plazas), and associated electrical and electronic systems (such as cathodic and stray current protection, power and power distribution, indoor and outdoor lighting, aids to navigation, and other traffic management and facilities-related electrical and electronic systems) using state-of-the-art technology, i.e., Computer-Aided Drafting/Design (CADD) and personal computers. Some positions may require incumbents to work at considerable heights above the ground.

The Transportation Engineer's (Electrical) assignment within the Department of Transportation will be in one of three major program areas:

TRAFFIC OPERATIONS: Incumbents review traffic and project reports; prepare plans, specifications and estimates of traffic control and highway lighting systems; prepare studies of the physical characteristics of traffic intersections, including channelization, obstructions and potential conflict areas; analyze traffic

**JOB DUTIES/TYPICAL TASKS**  
(Continued)

flow and accident data; prepare timing for new traffic control systems; adjust timing and review the operation of existing traffic control systems; develop strategies and software for traffic control equipment using mini-computers and microprocessors; investigate problems in transportation electrical systems and recommend solutions; inspect and review electrical installations during and after construction; assist in the evaluation and development of new electrical and electronic traffic control and lighting equipment; review and consolidate field reports; prepare contract documents; and assist district offices in the preparation of plans, specifications, and estimates; and prepare correspondence and reports.

**STRUCTURES:** Incumbents review plans and prepare plans, specifications and cost estimates of electrical systems; prepare material lists for electrical layouts and requisitions for the purchase of electrical materials and components; inspect construction, maintenance, and repairs; check electrical shop plans and details and contractors' lists of equipment and construction details; test completed work for compliance with contract specifications; as required, may act as a lead worker and review the reports of other Transportation Engineers' (Electrical); and prepare correspondence and reports.

**NEW TECHNOLOGY:** Incumbents prepare research proposals; investigate applications of new technology; conduct research; perform statistical analysis on research data and make recommendations on implementation and monitor research projects; make engineering studies of current methods of materials testing (including operational requirements and procedures, service demands, equipment needs, and cost analysis); perform the design and development of automated data acquisition systems; perform field tests and collect data; perform design, development, and testing of new electronic equipment; may act in a lead capacity for specification compliance testing, research, or instrumentation; analyze and evaluate test data and correlate individual test results; make presentations; and prepare correspondence and reports.

**EXAMINATION INFORMATION****Training and Experience Questionnaire - 100%**

All candidates will be required to complete a Training and Experience Questionnaire. The Questionnaire is designed to elicit specific information regarding each candidate's training and experience relevant to the Transportation Engineer (Electrical) classification. The information on the Training and Experience Questionnaire will be competitively assessed based on pre-determined rating criteria.

The Training and Experience Questionnaire measures the following areas determined to be important for success on the job.

Computer Skills  
Technical Skills

Written Skills  
Interpersonal Skills

Engineering Skills  
Speaking Skills

In addition, there are questions regarding work experience in jobs similar to Transportation Engineer (Electrical), personal characteristics, and work performance.

**VETERANS PREFERENCE**

Veterans preference credit will be added to the final score of all competitors who are successful in this examination and who qualify for, and have requested these points. Due to changes in the law, which were effective January 1, 1996, **VETERANS WHO ACHIEVE PERMANENT CIVIL SERVICE STATUS ARE NOT ELIGIBLE TO RECEIVE VETERANS CREDITS.**

**NOTIFICATION**

Competitors may obtain their results by connecting to the Internet at the following address:

[http://www.spb.ca.gov/employment/exam\\_start.htm](http://www.spb.ca.gov/employment/exam_start.htm)

Results are posted immediately. If you do not have access to the Internet, you should visit your local library or contact the State Personnel Board Service Center at (916) 653-1705.

**QUESTIONS?**

If you have questions concerning the Transportation Engineer (Electrical) examination or the application process, please call the State Personnel Board, Service Center, at (916) 653-1705. You may also contact the State Personnel Board in writing at 801 Capitol Mall, Sacramento, CA 95814. CALIFORNIA RELAY: For TDD Phone - (800) 735-2929; From Voice Phone - (800) 735-2922.

## GENERAL INFORMATION

**If you meet the requirements** stated on this bulletin, you may take this examination, which is competitive. Possession of the entrance requirements does not assure a place on the eligible list. Your performance in the examination described on this bulletin will be compared with the performance of the others who take this test, and all candidates who pass will be ranked according to their scores.

**The State Personnel Board** reserves the right to revise the examination plan to better meet the needs of the service if the circumstances under which this examination was planned change. Such revision will be in accordance with civil service laws and rules and all competitors will be notified.

**Eligible Lists:** Eligible lists established by competitive examination, regardless of date, must be used in the following order: 1) sub-divisional promotional, 2) departmental promotional, 3) multidepartmental promotional, 4) servicewide promotional, 5) open eligible list. When there are two lists of the same kind, the older must be used first. Eligible lists will expire in from one to four years unless otherwise stated on this bulletin. In the case of continuous testing examinations, names are merged into the appropriate eligible list in order of final test scores (except as modified by veterans preference credits) regardless of the date of the test and the resulting eligible lists will be used only to fill vacancies in the area shown on the bulletin.

**General Qualifications:** Candidates must possess essential personal qualifications including integrity, initiative, dependability, good judgement, and ability to work cooperatively with others; and a state of health consistent with the ability to perform the assigned duties of the class. A medical examination may be required. In open examinations, investigation may be made of employment records and personal history and fingerprinting may be required.

**Interview Scope:** If an interview is conducted, in addition to the scope described on this bulletin, the panel will consider education, experience, personal development, personal traits, and fitness. In appraising experience, more weight will be given to the breadth and recency of pertinent experience and evidence of the candidate's ability to accept and fulfill increasing responsibilities than to the length of his/her experience. Evaluation of a candidate's personal development will include consideration of his/her recognition of his/her own training needs; his/her plans for self-development; and the progress he/she has made in his/her efforts toward self-development.

**Veterans Preference:** California law limits the granting of veterans preference points in open entrance examinations and open non-promotional examinations. Credit in open entrance examinations is granted as follows: 10 points for veterans, widows or widowers of veterans, and spouses of 100 percent disabled veterans; and 15 points for disabled veterans. Credit in open non-promotional examinations is granted as follows: Five (5) points for veterans; and 10 points for disabled veterans. Directions for applying for veterans preference are on the Veterans Preference Application form which is available from the State Personnel Board office, written test proctors, and the Department of Veterans Affairs, P.O. Box 1559, Sacramento, CA 95807.

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# CALIFORNIA STATE PERSONNEL BOARD

801 Capitol Mall  
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